Patent Claims

1. Cover for an energy guide chain, where the cover (1) has a first end region (2) and a second end region (3) and is designed with at least one elastic section (4) provided between the first end region (2) and the second end region (3), designed in such a way that the following relationship applies to it:

$$\Delta L/S < 1$$

where

ΔL is the length change of the cover with a length L_0 according to Hook's law, and

S is the actual length change of the cover.

2. Cover according to Claim 1, characterized in that the at least one section (4) has a wavy shape.

3. Cover according to Claim 2, characterized in that the at least section (4) has waves of different heights (H).

4. Cover according to Claim 2 or 3, characterized in that the at least one section (4) has waves of different periods.

5. Cover according to Claim 2, 3 or 4, characterized in that the flanks (6) of the waves of the at least one section (4) have different slopes.

6. Cover according to one of Claims 2 to 5, characterized in that the wave troughs (8) and the wave crests (7) of the waves of the at least one section (4) have different curvatures.

7. Cover according to one of Claims 2 to 6, characterized in that the wave crests (7) and/or wave troughs (8) of the waves have different cross-sections than the flanks (7) of the waves.

8. Cover according to Claim 7, characterized in that the wave crests (7) and/or wave through S (8) of the waves have a lower thickness than the flanks (6).

9. Cover according to one of Claims 2 to 8, characterized in that the wavy section (4) is provided with a microstructure, at least partly.

10. Cover according to one of Claims 2 to 9, characterized in that the at least one section (4) has at least two regions where the regions have a different structure.

11. Cover according to one of Claims 1 to 10, characterized by at least two cover parts (11, 12), which partially overlap, where the cover parts (11, 12) are linked through at least one plate (13) running essentially transversely to the longitudinal direction of cover (4).

12. Cover according to Claim 11, characterized in that the at least one plate (13) is designed to have spring elasticity.

13. Cover according to Claim 11 or 12, characterized in that the at least one plate (13) is designed to have a wavy shape, at least partly.

14. Cover according to one of Claims 1 to 13, characterized in that the first and/or second end region (2, 3) is/are designed so that this is/these are suitable for positive and/or nonpositive locking to a transverse link (14) of a chain link.

15. Cover according to one of Claims 1 to 13, characterized in that the first and/or the second end region (2, 3) is/are designed as a transverse link/transverse links.

16. Cover according to one of Claims 1 to 15, characterized in that these have at least two sections (4) and at least one fastening region formed between the two sections (4), intended for linking to a chain link.

17. Cover according to one of Claims 1 to 16, characterized in that it is made of a plastic, at least partly.

18. Cover according to Claim 17, characterized in that at least one section (4) is made of at least two plastics with different elasticities.

19. Chain link of an energy guide chain
with two mounting links (18)
with at least one transverse link (14) joining the mounting links (18)
and at least one cover (1), where the cover (1) has a first end region (2) and a second end region (3) and has at least one elastic section (4) provided between the first end region (2) and the second end region (3), designed in such a way that the following relationship applies to it:

$\Delta L/S < 1$

where

ΔL is the length change of the cover with a length L_0 according to Hooks law, and

S is the actual length change of the cover.

20. Chain link according to Claim 19, characterized in that the cover (4) is specifically separably joined to at least one transverse link (14).

21. Chain link according to Claim 20, characterized in that at least one transverse link (14) is joined pivotably to at least one mounting link (18).

22. Chain link according to Claim 19, 20 or 21, characterized in that it has at least one fastening element (23), which is joined to a cover (4).

23. Chain link according to one of Claims 19 to 21, characterized by a cover (4) according to one or several of Claims 2 to 18.

24. Energy guide chain with a multiplicity of chain links (21), linked together with joints, where at least some chain links (14) have at least one cover (1), characterized in that the cover (1) has a first end region (2) and a second end region (3) and at least one elastic section (4) provided between the first end region (2) and second end region (3), designed in such a way that the following relationship applies to it:

$$\Delta L/S < 1$$

where

ΔL is the length change of the cover with a length L_0 according to Hook's law, and

S is the actual length change of the cover.

25. Energy guide chain according to Claim 24, characterized in the fact that at least one cover (4) extends over at least two chain links (21).

26. Energy guide chain according to Claim 24 or 25, characterized in that a first end region (2) and/or a second end region (3) is/are connected especially separably with a transverse link (14).

27. Energy guide chain according to Claim 24, 25 or 26, characterized in that at least some chain links (21) have fastening elements (23) which are intended for fastening at least one cover (4).

28. Energy guide chain according to one of Claims 24 to 27, characterized in that at least one cover (4) is joined to two neighboring chain links (21).

29. Energy guide chain according to one of the Claims of Claims 24 to 28, where a cover (4) is designed according to one or several of Claims 2 to 18.

30. Energy guide chain according to one of the Claims of Claims 24 to 29, characterized in that this is formed at least partly of chain links (14) according to one of Claims 19 to 23.